

REMARKS

Prior to this Reply, Claims 1-52 were pending. Through this Reply, Claims 1, 9, 12, 13, 19, 20-22, 30, 33-35, 38, 42, 43, 49, 50 and 52 have been amended. No claims were added or cancelled. Accordingly, Claims 1-52 are now at issue in the present case.

I. Drawings

The Examiner required corrected drawings because the original drawings were sketchy and not considered formal. The Examiner indicated that corrected drawings were required in order to avoid abandonment of the application.

In response, Applicants are submitting replacement Figs. 1-11 (contained on Replacement Sheets 1-8) to improve the quality of the drawings. No new matter has been added.

II. Objections to Claims 13 and 22-24

The Examiner objected to Claim 13 and 22-24 because of certain informalities. Specifically, the Examiner noted that Claim 13, line 15 inadvertently states that the ramp tab “does hit” the crash stop, instead of “does not hit” the crash stop. The Examiner required correction of Claim 13. In addition, the Examiner noted that Claims 22-24 are directed to a method, but the claim from which they depend is directed to an apparatus. The Examiner observed that the specifics of Claims 22-24 find antecedent basis from Claim 21, not Claim 20. Further, the Examiner indicated his belief that Claim 22 contains a typographical error and should depend from Claim 21 instead of Claim 20.

In response, as suggested by the Examiner, Claim 13 has been amended to change “does hit” to “does not hit.” Also, Claim 22 has been amended to depend from Claim 21, instead of

Claim 20. Accordingly, Applicants submit that the objections to Claims 13 and 22-24 have been overcome.

III. Amendments to Claims 20 and 35

Applicants have amended Claims 20 and 35 to correct obvious errors. Specifically, in Claim 20, the language to the left of the “equal sign” has been amended to read “Warp_factor” (as in Claims 12, 33, 42 and 52) instead of “Vel.” In Claim 35, the word “a” has been inserted before the word “factor.” No new matter has been added.

IV. Rejection of Claims 49, 51 and 52 Under 35 U.S.C. § 112

The Examiner rejected Claims 49, 51 and 52 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that Applicants regard as the invention. Specifically, the Examiner indicated that in Claim 49 the language “said variable factor” lacks proper antecedent basis. The Examiner noted that he believes that Claim 49 should depend from Claim 48 instead of Claim 43. The Examiner also observed that Claims 51 and 52 inherit the limitations of Claim 49.

In response, as suggested by the Examiner, Claim 49 has been amended, so that it depends from Claim 48, rather than Claim 43. Accordingly, Applicants believe that the rejection of Claims 49, 51 and 52 under 35 U.S.C. § 112, second paragraph, has been overcome.

V. Allowable Subject Matter

The Examiner objected to Claims 9, 12, 19, 20, 30, 33, 38-40, 42, 50 and 52 as being dependent upon a rejected base claim. However, the Examiner indicated that such claims would

be allowable if they were rewritten in independent form to include the limitations of their respective base claims and any intervening claims.

In response, Claims 9, 12, 19, 30, 33, 38, 42, 50 and 52 have been rewritten in independent form to substantially include all of the limitations of their respective base claims and any intervening claims. Applicants note that Claims 20, 39 and 40 have not been rewritten because Claim 20 depends from Claim 19, while Claims 39 and 40 depend from Claim 38. Accordingly, Applicants submit that the Examiner's objection to Claims 9, 12, 19, 20, 30, 33, 38-40, 42, 50 and 52 has been overcome.

VI. Claims 1-5, 13-15, 21, 24, 34 and 43-46

The Examiner rejected Claims 1-5, 13-15, 21-24, 34 and 43-46 under 35 U.S.C. § 102(b) as being anticipated by Applicants' admitted prior art as discussed on page 1, line 10 to page 8, line 2, along with page 16, lines 10-11. Applicants respectfully traverse the Examiner's rejection.

A. Independent Claims 1, 13, 21, 34, and 43

Without acceding to the statements or rejections made by the Examiner, Applicants have amended independent Claims 1, 13, 21, 34 and 43 to emphasize distinctions over the prior art.

The Examiner asserts that Applicants' admitted prior art teaches velocity profiles which "are direction specific depending on the present location of the transducer and the desired location of the information to be accessed." Applicants respectfully disagree.

The "background" section of the present specification describes only a system in which the velocity profile is determined based on the seek length (regardless of direction), and there is no disclosure of a prior system in which the profiles are "direction specific." Specifically, the

background describes a system in which “the shape of the seek profile depends upon the seek length” (page 6, line 1). The description makes it clear that the seek profile relates only to the length of the seek – whether it is long or short – and there is no disclosure of direction of seek being a factor in prior approaches. For example, page 5, line 19 to page 6, line 1 of the application states:

The length of the seek is defined as the distance between the starting track and the target track. For relatively long seek lengths, the actuator arm assembly 18, and transducer 24, may reach a peak velocity, and coast for a period of time at a relatively constant velocity prior to decelerating. Likewise, for relatively short seek lengths, the velocity of the transducer 24 may not reach the peak velocity prior to decelerating.

Because the background discloses a seek profile which is the same for any given seek length – regardless of direction – it is clear the disclosure referenced by the Examiner at pages 7-8 of the present application is referring to limiting velocity, regardless of direction. Specifically, on page 7, lines 18-19, the application states:

This is typically achieved by creating a seek profile which limits the velocity at which the actuator arm assembly 18 is allowed to travel.

As should be noted, there is no reference to direction of travel. Moreover, on page 7, line 21 to page 8, line 2, the application states that this solution:

results in a seek velocity profile which has an increased seek time compared to a seek velocity profile which does not limit the actuator arm assembly 18 and transducer 24 velocity.

The fact that the described prior systems limited all seeks (not just those toward the ramp) is further emphasized when certain aspects of the present invention are described in the application, including advantages of certain embodiments of the present invention over the previous approaches. Specifically, on page 11, lines 13-15, the application states:

The velocity at which a transducer is allowed to travel is limited *only when the transducer is seeking toward the ramp*. Thus, average seek time is reduced compared to systems which limit transducer velocity *on all seeks*. (emphasis added)

In short, it is believed that, when the application is read *as a whole*, the Applicants' admitted prior art does not disclose a system in which the profiles are "direction specific," as asserted by the Examiner.

In contrast, Claim 1 has been amended to emphasize that the first direction is "away from a park position" and that the second velocity profile is adjusted *without needing to adjust the first transducer velocity profile*. Accordingly, Applicants submit that Claim 1 is patentably distinguishable from Applicants' admitted prior art, at least, because the admitted prior art does not teach determining a velocity profile in a direction towards the park position, and adjusting this profile *without the need to adjust the first transducer velocity profile*. Claim 13 has been amended in a similar manner and is believed to be patentable for reasons similar to those provided with respect to Claim 1.

With respect to Claim 21, Applicants submit that such claim is patentable at least because Applicants' admitted prior art fails to disclose that the adjustment of at least the deceleration part of the profile is "based on at least a direction of travel of said transducer." As noted above in connection with Claim 1, contrary to the Examiner's assertion, the "background" section of the present specification describes a system in which the velocity profile is determined based on the seek length (regardless of direction), and there is no disclosure of a prior system in which the profiles are "direction specific."

Claim 34 requires the velocity to be derated "based on at least a direction of travel of said actuator arm." Accordingly, Applicants submit that Claim 34 is patentably distinguishable from

Applicants' admitted prior art for reasons similar to those discussed above in connection with Claim 21.

With respect to Claim 43, Applicants have amended such claim to emphasize that the second velocity profile (used when the starting location is a second direction from said target location, compared to the direction when the first profile is used) is different from said first velocity profile. Accordingly, Applicants believe that Claim 43 is patentable for reasons similar to those discussed above in connection with Claim 1.

B. Claims 2-5, 14, 15, 24 and 44-46

Applicants submit that Claims 2-5, 14, 15, 24 and 44-46 are patentable, at least, because they depend, directly or indirectly, from one of independent Claims 1, 13, 21, 34 and 43.

Applicants note that they do not necessarily agree with the comments or assertions made in the Office Action with respect to these claims.

VII. Claims 6-8, 10, 11, 16-18, 25-29, 31, 32, 35-37, 41, 47-49 and 51

The Examiner rejected Claims 6-8, 10, 11, 16-18, 25-29, 31, 32, 35-37, 41, 47-49 and 51 under 35 U.S.C. § 103(a) as being unpatentable over Applicants' admitted prior art in view of U.S. Patent No. 5,889,629 to Patton (hereinafter "Patton").

Applicants submit that Claims 6-8, 10, 11, 16-18, 25-29, 31, 32, 35-37, 41, 47-49 and 51 are patentable, at least, because they depend, directly or indirectly, from one of independent Claims 1, 13, 21, 34 and 43. The reasons associated with the patentability of such independent claims are provided above. Applicants further note (as described below) that Patton, alone, or combined with Applicants' admitted prior art, fails to anticipate or render the claimed invention obvious.

The Examiner asserts (with respect to Claim 1) that Applicants' admitted prior art "specifically discusses a derate seek profile that is used during power loss while in a seek so that damage to the disk does not occur." Without necessarily agreeing with this characterization, or with the Examiner's other comments, Applicants note that such a disclosure would be distinguishable from the present invention. The present invention involves derating a profile which is used during normal (non-park) use. In this way, if a power loss occurs, the velocity of the transducer will be sufficiently low (because the normal-use velocity, prior to power loss, was limited), that the risk of damage to the drive will be reduced. Specifically, page 14, lines 5-8 of the application states:

if the transducer has a relatively high velocity, and the disk drive loses power, the ramp tab located at the end of the actuator arm may bounce off of the crash stop resulting in the transducer reloading onto the disk surface at a high speed.

As depicted in Fig. 4, and described at pages 16-18, the process of the present invention provides for the receipt of an ordinary seek request 200. Derating is performed 220, without an intervening power loss.

Patton relates to a velocity profile which is used during a park operation, not during normal, non-park operations. Applicants note that the process of Fig. 4 of Patton is a flowchart which illustrates the steps of the parking method 106 (Col. 3, lines 48-49). From Col. 2, line 66 to Col. 3, line 2, Patton expressly states:

This invention includes a disk drive system for powering a disk drive microprocessor using BEMF generated by the still-spinning spindle motor *after host DC power fails, and for parking the heads* under microprocessor control.

In contrast, independent claims 1, 13, 21, 34 and 43 have been amended to emphasize that the limiting or derating of the (towards-park position) seek profile is performed during

normal non-park operations. Because neither the admitted prior art, nor Patton discloses derating the (towards-park position) seek profile, Applicants believe the independent claims are patentably distinguishable from Applicants' admitted prior art and Patton.

Because the independent claims are believed to be patentable, Applicants submit that dependent Claims 6-8, 10, 11, 16-18, 25-29, 31, 32, 35-37, 41, 47-49 and 51 are patentable for at least the same reasons as their corresponding independent claims.

VIII. Additional Claim Fees

In determining whether additional claim fees are due, reference is made to the Fee Calculation Table (below).

Fee Calculation Table

	Claims Remaining After Amendment		Highest Number Previously Paid For	Present Extra	Rate	Additional Fee
Total (37 CFR 1.16(c))	52	Minus	52	= 0	x \$18 =	\$ 0.00
Independent (37 CFR 1.16(b))	14	Minus	5	= 9	x \$86 =	\$ 774.00

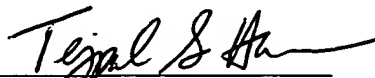
As set forth in the Fee Calculation Table (above), Applicants previously paid claim fees for fifty-two (52) total claims and for five (5) independent claims. Applicants hereby authorize the Commissioner to charge Deposit Account No. 50-2198 in the amount of \$774.00 for the presentation of nine (9) independent claim in excess of five (5). Although Applicants believe that no other fees are due, the Commissioner is also authorized to charge Deposit Account No. 50-2198 for any fee deficiencies associated with filing this paper.

IX. Conclusion

Applicants believe that the application appears to be in form for allowance. Accordingly, reconsideration and allowance thereof is respectfully requested.

The Examiner is invited to contact the undersigned at the below-listed telephone number regarding any matters relating to the present application.

Respectfully submitted,



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